AMORES\(^1\):
an Architecture for MObiquitous REsilient Systems

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Collaboration:
The AMORES project is organized around four partners and one associated member, which are respectively LAAS-CNRS (Christian Artigues, Yves Deswarte, Jérémie Guiochet, Marie-José Huguet, Marc-Olivier Killijian, David Powel, Matthieu Roy), MobiGIS (Frédéric Schettini, Laurent Dezou), Université de Rennes 1 (Emmanuelle Anceaume, Sébastien Gambs, Gilles Guette, Michel Hurfin), Supélec (Christophe Bidan, Nicolas Prigent) and Tisséo (Olivier Clarimon et Régis Larvor).

Context
Today, an expanding number of people are using geo-localized devices such as smartphones or GPS to travel or simply commute. However, most of the current transportation systems do not exploit to the full opportunities offered by these geo-located devices to improve mobility or to propose new transportation solutions. At the same time, mobile technologies users are feeling increasingly tracked and preserving their privacy is a key issue to them.

Keywords: Mobiquitous, Geo-privacy, Carpooling, Real Time Routing, Mobile Social network.

Main goals & use cases
The AMORES project aims to provide an architecture for the provision of privacy preserving and resilient collaborative services in “mobiquitous” (i.e., mobile and ubiquitous) systems. This project is built around three use-cases from the area of public transportation:
- dynamic carpooling
- real-time computation of multimodal transportation itineraries
- mobile social networking
This project will focus on the provision of geo-located services such as geo-casting, geo-storage, geo-queries and, more generally, geo-computing.

Research tasks
AMORES is architected around four main tasks. The first task deals with use-cases, prototypes and privacy assessment. The second task addresses geo-communication primitives: verified positioning localized pseudonyms (locanyms) and geo-services. The third task deals with privacy-preserving communication means such as anonymous routing and geo-cryptography. Finally, the last task is devoted to collaborative mechanisms.

Summary
The outputs of the project are both conceptual and practical: 1) innovative privacy preserving geo-communication primitives for “mobiquitous” systems, and 2) middleware and prototypes. Project results are expected to impact next generation public transportation systems.

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